

AMENDMENT TO THE CLAIMS

Please **CANCEL** claims 1-2 and 5-7.

This listing of claims will replace all prior versions, and listings, of claims in the application.

In the Claims

Claims 1-2. (canceled).

3. (Previously amended) A method of progressive time stamp resolution in a multimedia presentation, comprising the steps of:

supplying a player of a multimedia presentation with information comprising two labels, one for a multimedia object's start time and one for the multimedia object's end time relative to other multimedia object start and stop times, and three durations, a maximum duration and a preferred duration for each multimedia object prior to playback of the multimedia object; and

resolving the durations of the multimedia objects using said information based on actual multimedia object durations and arrival of information of multimedia objects to be played, wherein the step of resolving comprises the steps of:

collecting all the dependency relations for a label P_x , by taking all objects n that have P_x as the label for their end time:

$$t_n + \text{minimum}(n) \leq t_x \leq t_n + \text{maximum}(n) \quad n = 1, \dots, N$$

where t_n is the start time of object n , and N is the number of objects;

using the N relations to calculate the tightest bounds on t_x :

$$\min \{t_x\} \leq \{t_x\} \leq \max \{t_x\}$$

with

$$\min\{t_x\} = \max\{t_x + \text{minimum}(n)\} \quad n = 1, \dots, N$$

$$\max\{t_x\} = \min\{t_x + \text{maximum}(n)\} \quad n = 1, \dots, N;$$

recalculating bounds on the duration of each object n , by using:

$$\text{duration}(n) = t_x - t_n$$

to get

$$\min\{t_x\} - t_n \leq \text{duration}(n) \leq \max\{t_x\} - t_n \quad n=1, \dots, N; \text{ and}$$

recalculating the preferred duration of each object n according to the process:

if $(\text{preferred}(n) < \min\{t_x\} - t_n)$ then

$$\text{preferred}(n) = \min\{t_x\} - t_n$$

else if $(\text{preferred}(n) > \max\{t_x\} - t_n)$ then

$$\text{preferred}(n) = \max\{t_x\} - t_n$$

end if.

4. (Original) The method of progressive time stamp resolution in a multimedia presentation recited in claim 3 wherein the step of resolving further comprises the steps of:

using as the general error criterion for resolving the duration of each multimedia object:

$$E = \sum_{n=1}^N \{\text{duration}(n) - \text{preferred}(n)\}^2$$

or, substituting $\text{duration}(n) = t_x - t_n$:

$$E = \sum_{n=1}^N \{t_x - t_n - \text{preferred}(n)\}^2$$

and taking the derivative of E with respect to t_x , and setting this to 0 to obtain the optimal solution for the absolute time t_x of label Px as:

$$t_x = \frac{1}{N} \sum_{n=1}^N \{t_n + \text{preferred}(n)\}; \text{ and}$$

calculating the corresponding duration of multimedia object n as:

$$\text{duration}(n) = t_x - t_n.$$

Claims 5-7. (canceled).